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XXXI. *A Letter to Joseph Banks, Esq. President of the Royal Society, &c. from Daniel-Peter Layard, M. D. Fellow of the Royal Societies of London, Antiquaries, and Gottingen, &c. relative to the Distemper among the horned Cattle.*

Read June 15; 1780.

S I R,

**Y**OUR noble predecessor, the late Earl of MACCLESFIELD, thought that every information relative to the ascertaining the nature of the distemper among the horned cattle, and to confirm the utility of inoculation, was worthy attention, and the notice of the Royal Society.

His lordship was pleased, in 1757, to lay before the Society my letter, which is inserted in vol. L. of the Philosophical Transactions; and now, SIR, to a worthy and respectable successor, whose life, health, and fortune, have been most generously adventured for the promoting natural knowledge, I address this, to impart the result of a long and strict inquiry.

In consequence of the essay which I published in 1756, I was called upon in 1769, by government, to assist with my advice towards the stopping the progress of the contagious distemper among the cattle, which had broken out in Hampshire: and by mere accident I discovered how the infection was brought from Holland to London, and was conveyed into that county.

Speedily and effectually to extirpate the calamity, no assistance was permitted to visit the infected villages, lest the farmers should be induced to prolong the illness, by attempting to cure their cattle; but positive orders were issued that all the cattle should be killed and buried properly, by which vigorous and salutary directions the distemper ceased intirely in a short time.

The same acts of parliament and orders of council, to kill the cattle and bury them deep, succeeded also soon after in North Britain; and to the former acts and orders issued in his late Majesty King GEORGE the second's reign, these alterations were made: to order that the infected cattle should be killed, without effusion of blood, by strangling; the hides to be neither cut or flased; but the carcasses buried whole; and that all the fodder, litter, excrement, &c. should be buried, instead of being burned.

Since

Since that time the contagious distemper has been brought twice into Essex, and once into Suffolk, from Holland, and as often stopped by the same means.

His Majesty having most graciously been pleased in April 1770 to appoint me to hold a foreign correspondence, the orders and regulations which had happily succeeded in Great Britain were communicated to the Dutch, the Flemish, and the French, and copies of all papers delivered to Baron NOLCKEN, the Swedish minister. In Flanders, and Picardy in France, the system of killing was adopted, and succeeded. Afterwards in 1774, when the same contagion was carried into the South of France from Holland through Bourdeaux, many attempts having failed to effect a cure, the devastation was at last stopped by no other means than by killing the cattle, as in Great Britain. And here I beg leave to observe, that M<sup>onsieur</sup> VICOX D'AZYR, in his *Exposé des Moyens Curatifs et Préventifs contre les Maladies pestilentiellees, des Betes à Corne*, published by authority at Paris in 1776, says, p. 577, “ That the salutary effects  
“ of the precautions taken in the Austrian Low Coun-  
“ tries had excited the attention of the English, who by the  
“ same means got rid of the same calamity. They have  
“ exactly and scrupulously translated and put into exe-  
“ cution the edicts issued from the Juntos of Ghent and  
“ Brussels,

“ Bruffels, and their undertaking has been crowned with  
“ the most complete fuccess.” Monf. VICQ. D’AZYR was  
misinformed; for, on the contrary, the late Mr. Consul  
IRVINE transmitted the acts of parliament, the orders of  
council, and my papers, containing every necessary in-  
formation, to a member of the Junto of Ghent, whence  
they were sent to the government at Bruffels; and it was  
a long while before the Juntos could be prevailed upon  
to adopt the system of killing, as they called it. It  
originated in England in 1747; and it is certain, that the  
Court of Vienna knew fully the obligations which the  
Austrian Netherlands had to the British government,  
whose orders and regulations had been implicitly fol-  
lowed, and which Monf. VICQ. D’AZYR, says, p. 585,  
“ He had modified and adapted to the rules of French  
“ government.”

In Flanders the infection was also prevented from  
spreading a second time by the same method of proceed-  
ing; but unfortunately in Holland the cattle continue to  
be exposed to the same disease. The half-yearly returns  
which have been regularly sent me contain melancholy  
accounts of the severe loss of cattle; sometimes the  
whole have perished; at other times two-thirds have  
died; and generally above half fell when the sickness was  
less violent. In a country where the illness is become

general, and constantly raging more or less, where the system of killing the cattle cannot now be thought of, and where inoculation has met with so many opponents of all ranks, there can be no other hope of getting rid of the calamity than by admitting into the United Provinces no other cattle than such which are found, or recovered from the infection <sup>(a)</sup>.

I shall not trouble you, SIR, with the returns from Holland, or the tables of inoculation in Denmark, which would too much increase the length of this letter, but only mention, that in Denmark, where the contagious distemper is become naturalized and general, the Danish government have not only wisely adopted the orders and regulations issued in Great Britain, but have with unwearied application pursued the practice of inoculation. Count BERNSDORFF and Dr. STRUENSEE had all the necessary instructions, books, and papers, delivered to them by me, when the King of Denmark was in England; and I am assured by DANIEL DELAVAL, Esq. lately his Majesty's envoy-extraordinary at that Court, that inoculation is approved, recommended, and by authority established. Even in the first three years that inoculation was practised, of near three hundred head of cattle which were inoculated in a Danish island, not a sixth

(a) By the last half-yearly return from Holland, the number of infected cattle was so small, that it was hoped no further return to the States would be necessary.

part were lost, notwithstanding the many disadvantages which unavoidably occurred.

Profeſſor CAMPER had before attempted to introduce inoculation in Holland; but the learned Profeſſor's abilities, diligence, and perſeverance, were ſo much counteracted by the obſtinacy and interruption of the peaſants, the badneſs of the ſituation, and inclemency of the weather, that out of 112 only 41 recovered; and yet that number is full ſufficient to prove his opinion of the diſeaſe, and of the uſe of inoculation.

Application was made, in 1770, to the Lord President of the Council by a famous inoculator, for leave to take matter from the infected beasts in Hampshire, and to inoculate the cattle in the Southern and Western counties of England: on a representation to his lordship, that by such an operation the contagion would not only be introduced in those counties where it had not yet appeared, but also might spread the sickness, so as to become general all over the kingdom as before, a positive and strict injunction was given to drop the intention; especially as by killing the cattle there was no doubt of extirpating the contagion out of Hampshire. The inoculator therefore made no attempt.

According to the several prejudices of different countries, various opinions have arisen of the nature of this sickness.

sickness. Such as are averse to inoculation have obstinately refused to acknowledge it was similar to the small-pox in the human body, and have very idly asserted, that the only intention of declaring this contagion to be a sort of small-pox was purposely, and with no other view than to promote inoculation for the small-pox. Others have as positively declared it to be a pestilential putrid fever, owing to a corrupted atmosphere, and arising from infected pastures; but unfortunately for the supporters of this opinion, while the contagious distemper raged with the utmost violence on the coasts of Friseland, North and South Holland, Zealand, and Flanders, there was not the least appearance of it on the English Coast from the North Foreland to the Humber, although the coast and climate are the same.

I shall not dwell on Mr. TURBERVILLE NEEDHAM's eloquent discourse read at Brussels, since he must have been convinced, when he came to England in 1776, that the illness was of another sort than he imagined; for such a proof of the inefficacy of salt recommended by him as an antiseptic in this disease has been given as is positive and decisive; namely, that in Scania, a province in Sweden, where it is customary to place a large piece of rock salt, called *salt-slein*, for the cattle housed in winter to lick, that they may be urged to drink, all the cattle in  
that



that province were seized with the contagious distemper, and not one out-lived it. Monf. PAULET, in his *Recherches sur les Maladies Epizootiques*, vol. II. p. 25, 26. Paris 1776, has sufficiently exploded Mr. NEEDHAM's opinion.

M. BERGIUS had insisted, that the contagion was not of the exanthematous sort, and therefore inoculation must be of no use; but this opinion was also fully refuted by the late Professor ERXLEBEN of Gottingen, in his learned oration on the 20 of October, 1770.

From every information, domestic or foreign, and comparing the several opinions, experience and observation plainly and completely determine the dispute. The disease among the horned cattle, so fatal in many countries, is not endemial or natural to Europe, although it is become so in Denmark, from spreading all over the Danish dominions, and its long continuance in that kingdom. It is an eruptive fever of the variolous kind<sup>(b)</sup>, and notwithstanding the exanthemata, or pustules, may have been frequently overlooked, yet none ever recovered without more or less eruption or critical abscesses; but these differ from the pestilential sort; no otherways simi-

(b) In a letter from Monf. VICQ D'AZYR to Dr. LAYARD, dated Paris, August 28, 1780, is the following declaration: "Il me paroît comme à vous que c'est toujours la même maladie qui a régné depuis 1711; et qu'elle a de grands rapports avec l'éruption varioleuse."

lar to the plague, but, like unto the small pox, it is communicated by contact, by the air conveying the effluvia, which also lodge in many substances, and are thereby carried to very distant places. Unlike other pestilential, putrid, or malignant fevers, it bears all the characteristic symptoms, progress, crisis, and event of the small-pox; and, whether received by contagion or inoculation, has the same appearances, stages, and determination, except more favourably by inoculation, and with this distinctive and decisive property, that a beast having had the sickness, naturally or artificially, never has it a second time.

Thus, SIR, I have endeavoured to lay before you and the Royal Society, the result of my inquiries, experiments, observations, and correspondence, concerning this calamitous sickness, which, from my situation in Huntingdonshire in 1756, it fell to my lot to investigate.

His Majesty's paternal care recommended from the Throne in 1770, and ordered every attention to be given to free his subjects from the impending calamity, which had been felt so severely in former years. The great Council of the Nation gave the strongest assurances of their readiness to support and assist the Royal commands; and the most salutary and effectual directions and orders, which originated in Great Britain were humanely and generously transmitted, by a constant correspondence in

the course of above ten years, to every distressed state abroad, who also have enjoyed the same success.

You will allow me, SIR, I hope, to express the peculiar satisfaction I feel as an Englishman, that my endeavours in this public service are honoured with the approbation of our most gracious Sovereign, and the goodwill of my native country.

And happy in this opportunity I request you, SIR, to accept of my warmest wishes that you may long fill the high office of President of the Royal Society, with health to pursue your philosophical researches; and may enjoy from the most respectable and liberal Society in the world, the just and due tribute of their hearty acknowledgements for having their institution, honour, and interest, so much at heart.

I have the honour, &c.

Lower Brook Street,  
April 8, 1780.

